

Region 11 Technical Note – Geomorphic Terms

Date: May 2008

Subject: Geomorphic terms

Purpose: Provide standard list of geomorphic terms to use in Region 11

Procedure: Use the following list of *Landscape, Landform, Microfeature, and Anthropogenic Feature Terms* defined in the National Soil Survey Handbook (NSSH) Glossary (comprehensive alphabetical and subset lists grouped by Geomorphic Process or other Groupings). These lists are the core of the Geomorphic Description System (Schoeneberger and Wysocki, 2002).

A) LANDSCAPES - broad or unique groups or clusters of natural, spatially associated features.

drumlin field
dune field
glaciokarst
hills (singular = Landform)
ice-margin complex

karst
lake plain (also Landform)
outwash plain (also Landform)
river valley (also Landform)
till plain (also Landform)

B) LANDFORMS - discrete, natural, individual, earth-surface features mappable at common survey scales.

alluvial fan
alluvial flat
backswamp
bar
barchan dune
beach
beach ridge
beach terrace
blowout
bluff
bog
braided stream
broad interstream divide
channel
cliff
closed depression (also Micro.)
collapsed lake plain
crevasse filling
delta
depression
disintegration moraine
drainageway
drumlin
drumlinoid ridge
dune
end moraine
escarpment
esker
fen
flat
flood plain
flood-plain splay
flood-plain step

foredune
free face (also Geom. Comp. - Hills)
glacial drainage channel
glacial lake (water body)
glacial lake [relict]
ground moraine
head-of-outwash
hill
hillslope
ice-contact slope
ice-marginal steam
interdrumlin
interdune (also Microfeature)
interfluvium (also Geom. Comp. - Hills)
island
kame
kame moraine
kame terrace
kettle
knob
knoll
lake (water body)
lakebed [relict]
lake plain (also Landscape)
lake terrace
landslide
lateral moraine
loess bluff
loess hill
longshore bar [relict]
marsh
meander scar
medial moraine

Region 11 Technical Note – Geomorphic Terms

monadnock
moraine
mud flat
natural levee
open depression (also Micro.)
outwash delta
outwash plain (also Landscape)
outwash terrace
overflow stream channel
oxbow
oxbow lake (water body)
oxbow lake (ephemeral)
paha
parabolic dune
patterned ground (also Micro.)
pitted outwash plain
pitted outwash terrace
plain (also Landscape)
point bar
pothole
pothole lake (water body)
ravine
recessional moraine
ridge
river (water body)
river valley

roche moutonnée
sand boil
scarp
scour (mark)
seif dune
sinkhole
slackwater (water body)
slough (ephemeral water)
slough (permanent water)
slump
strath terrace
stream (water body)
stream terrace
structural bench
swale
swamp
terminal moraine
till-floored lake plain
till plain (also Landscape)
transverse dune
tree-tip mound
tree-tip pit
tunnel valley
tunnel-valley lake (water body)
valley train
wave-cut platform

C) MICROFEATURES - discrete, natural, earth-surface features typically too small to delineate at common survey scales.

closed depression (also Landform)
gully
interdune (also Landform)

open depression (also Landform)
patterned ground (see below)

Patterned ground microfeatures - used in association with the landform "patterned ground".

Periglacial patterned ground microfeatures:

ice wedge polygons

D) ANTHROPOGENIC FEATURES - discrete, artificial (human-made or extensively modified), earth-surface features.

artificial collapsed depression
artificial levee
beveled cut
borrow pit
burial mound
cut (road, railroad)
cutbank
ditch
dredged channel
dredge-deposit shoal
dredge spoil bank
dump
fill
filled marshland
floodway
gravel pit
landfill (see sanitary landfill)
leveled land
log landing

midden
openpit mine
pond (human-made)
quarry
railroad bed
reclaimed land
road bed
sand pit
sanitary landfill
scalped area
sewage lagoon
skid trail
spoil bank
spoil pile
surface mine
tillage features (below)
truncated soil
urban land

Region 11 Technical Note – Geomorphic Terms

Tillage / Management features (common types):

- conservation terrace (modern)
- double-bedding mound
- drainage ditch
- furrow
- hillslope terrace (e.g., archeological features)
- inter-furrow

DRAFT

Region 11 Technical Note – Geomorphic Terms

GEOMORPHIC ENVIRONMENTS AND OTHER GROUPINGS - Landscape, Landform, and Microfeature terms grouped by geomorphic process (e.g. Fluvial) or common settings (e.g. Water Bodies). These lists are not mutually exclusive and some features occur in more than one environment or setting.

LACUSTRINE - related to inland water bodies.

Landscapes:

lake plain (also Landform)

Landforms:

bar
beach
beach ridge
beach terrace
bluff
delta
flat
foredune
island

lakebed [relict]
lake plain (also Landscape)
lake terrace
longshore bar [relict]
mud flat
oxbow lake (ephemeral)
till-floored lake plain
wave-cut platform

FLUVIAL - dominantly related to concentrated water flow (channel flow); includes erosional and depositional features, but excluding glaciofluvial landforms (see Glacial), and permanent water features (see Water Bodies).

Landforms:

alluvial fan
alluvial flat
backswamp
bar
braided stream
channel
delta
drainageway
flood plain
flood-plain splay
flood-plain step

meander scar
natural levee
overflow stream channel
oxbow
oxbow lake (ephemeral)
point bar
ravine
river valley
strath terrace
stream terrace

SOLUTION - dominated by dissolution, and commonly, subsurface drainage.

Landscapes:

glaciokarst

karst

Landforms:

sinkhole

EOLIAN - dominantly wind related, erosional or depositional.

Landscapes:

dune field

Region 11 Technical Note – Geomorphic Terms

Landforms:

barchan dune
blowout
dune
foredune
interdune
loess bluff

loess hill
paha
parabolic dune
seif dune
transverse dune

Microfeatures:

interdune (also Landform)

GLACIAL - directly related to glaciers; includes glaciofluvial, glaciolacustrine, glaciomarine, and outwash features.

Landscapes:

drumlin field
glaciokarst
hills

ice-margin complex
outwash plain (also Landform)
till plain (also Landform)

Landforms:

collapsed lake plain
crevasse filling
disintegration moraine
drumlin
drumlinoid ridge
end moraine
esker
glacial drainage channel
glacial lake [relict]
glacial lake (water body)
ground moraine
head-of-outwash
ice-contact slope
ice-marginal stream
interdrumlin
kame
kame moraine
kame terrace
kettle

lateral moraine
medial moraine
moraine
outwash delta
outwash plain (also Landscape)
outwash terrace
paha
pitted outwash plain
pitted outwash terrace
pothole
recessional moraine
roche moutonnée
terminal moraine
till-floored lake plain
till plain (also Landscape)
tunnel valley
tunnel-valley lake (water body)
valley train

Microfeatures:

swale

PERIGLACIAL - related to non-glacial, cold climate (modern or relict), including periglacial forms of patterned ground. Note: consider "patterned ground" as a Landform, but treat specific types of patterned ground, singular or plural, as Microfeatures.

Landforms:

patterned ground (see Microfeatures for types)

Microfeatures:

ice wedge polygons

Region 11 Technical Note – Geomorphic Terms

MASS MOVEMENT (MASS WASTING) - dominated by gravity, including creep forms.

Landscapes: these generic Landscapes are not Mass Movement features per say, but are commonly modified by, and include localized areas of, Mass Movement.

hills

Landforms:

landslide

slump

TECTONIC and STRUCTURAL - related to regional or local bedrock structures, or crustal movement. In Soil Survey, tectonic and structural features are only recognized if they have some expression at or near the land surface.

Landscapes:

hills

Landforms:

structural bench

Microfeatures:

sand boil

SLOPE - generic terms or those that describe slope form, geometry, or arrangement of land features, rather than any particular genesis or process.

Landscapes:

hills

Landforms:

bluff

broad interstream divide

cliff

escarpment

free face (also Geom. Comp. – Hills)

hill (plural = Landscape)

hillslope

interfluve (also Geom. Comp. - Hills)

knob

knoll

paha

plain (plural = Landscape)

ridge

scarp

EROSIONAL – related dominantly to water erosion but excluding perennial, channel flow (i.e. fluvial, glaciofluvial), or eolian erosion.

Landscapes:

hills

Landforms:

free face (also Geom. Comp. – Hills)

monadnock

paha

structural bench

Microfeatures:

swale

DEPRESSIONAL - low area or declivity features, excluding permanent water bodies.

Region 11 Technical Note – Geomorphic Terms

Landforms:

alluvial flat
closed depression (also Micro.)
depression
drainageway
kettle

open depression (also Microfeature)
pothole (intermittent water; also
Landform)
ravine
swale

Microfeatures:

closed depression (also Landform)
open depression (also Landform)

pothole (inter. water; also Landform)
tree-tip pit

WETLANDS - Related to vegetated and / or shallow wet areas, and wet soils. Provisional list: conventional, geologic definitions; not legalistic or regulatory usage.

Landscapes: generally, there is no appropriate Landscape term for wetlands; by default, choose the most appropriate Landscape term from another Process Environment or Other Grouping

Landforms:

backswamp
bog
fen
marsh
mud flat

oxbow lake (ephemeral water)
pothole (intermittent water)
slough (intermittent water)
swamp

Region 11 Technical Note – Geomorphic Terms

WATER BODIES - Discrete "surface water" features, primarily permanent open water, which in Soil Survey Reports are commonly treated as the generic map unit "water" (e.g. lake), or as a spot / line symbol (e.g., perennial stream).

Landforms:

glacial lake
ice-marginal stream
lake
oxbow lake
pothole (lake) (also Micro.)

river
slackwater
slough (permanent water)
stream (permanent water)
tunnel-valley lake

SUBAQUEOUS FEATURES - Discrete, relatively shallow underwater features that commonly can support rooted plants, and adjacent features, ordinarily found below permanent open water. Historically, in Soil Survey Reports these underwater features have been included in the generic map unit "water".

Landforms:

TBD

Microfeatures:

TBD

Region 11 Technical Note – Geomorphic Terms

List of Materials or Material-Related, Structure, or Morphological-Feature Terms Contained in the Glossary.

ablation till	melt-out till
alluvium	metamorphic rock
backswamp deposit	mine spoil, coal extraction
basal till	mine spoil, metal-ore extraction
beach sands	mine spoil or earthy fill
bedding plane	moraine
bedrock	moss peat
buried soil	muck
chert	mucky peat
colluvium	outcrop
conglomerate	outwash
coprogenous earth	overburden
coprogenous material	paleosol
diamicton	peat
diatomaceous earth	pedisegment
discontinuity	pitted outwash
dolomite (mineral)	regolith
dolomite (rock)	relict soil
dolostone - NR	residuum
dredge spoils	sandstone
drift (glacial geology)	sediment
eolian deposit	sedimentary peat
erratic	sedimentary rock
fill	shale
fly ash	siltstone
flowtill	slip face
formation (stratigraphy)	slope alluvium
glaciofluvial deposits	spoil bank
glaciolacustrine deposits	spoil pile
herbaceous peat	stone line
igneous rock	subglacial till
interbedded	subglacial melt-out till
lacustrine deposit	supraglacial till
lamella	till (glacial)
limestone	valley fill
lithologic	valley side alluvium
lodgment till	varve
loess	welded soil
marl	woody peat

Genesis - Process Terms and Geologic Time Terms Contained in the Glossary.

accretion	buried
aggradation	colluvial
alluvial	constructional (geomorphology)

Region 11 Technical Note – Geomorphic Terms

creep
cut and fill
degradation
deposition
destructional (geomorphology)
discontinuity
eolian
erosion
erosional (geomorphology)
fluvial
geomorphology
glacial
glaciation
Holocene

mass movement
pedoturbation
Pleistocene
Quaternary
recent
relict
scour
slope wash
stratified
stratigraphy
subglacial
Tertiary
weathering
welding

DRAFT